1/PRTS

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Description:

Inking or dampening unit of a rotary press

The invention relates to an inking or dampening unit of a rotary press, having at least one applicator roll, according to the precharacterizing clause of patent claim 1.

DE 33 42 853 C2 discloses an inking unit, in which an ink applicator roll can be pivoted about a distributor cylinder and can be thrown onto a form cylinder at the same time. The applicator roll is mounted on both sides in levers. Adjustable stops against which the levers can be moved serve to adjust the applicator roll on the form cylinder. A disadvantage is the complexity of the setting and subsequent adjustment of the stops.

It is an object of the invention to provide an inking or dampening unit which is distinguished by low setting and adjusting complexity of the applicator rolls.

In an inking or dampening unit of the generic type, the object is achieved according to the invention by the features of the independent patent claim. The applicator roll is thrown onto the form cylinder with a defined force thanks to the throwing-on action with a controlled force. This contact force (reaction force) is in equilibrium with the throwing-on force and is automatically set. The contact force can be selected by varying the throwing-on force and it is thus easier to set what is known as the imprint width. The throwing-on action is not sensitive to positional

deviations of the inking or dampening unit with respect to the form cylinder, as the applicator roll finds its equilibrium automatically by means of an appropriate pivoting movement. Subsequent adjustments can also be performed automatically in this way, for example in the event of swelling or shrinking of the applicator roll or changes in diameter as a result of thermal expansion.

The applicator roll can also follow limited movements of the form cylinder, for example the print throwing-on and throwing-off movement, while maintaining its setting.

The proposed throwing-on action also makes it possible to use form cylinders of different diameter, onto which the applicator roll can be thrown in a self-adjusting manner. As a result, it is no longer necessary to rebuild the inking or dampening unit if the format of the printing press is changed, and it is possible to realize a uniform inking and dampening unit configuration for a range of formats of form cylinders.

Further features and advantages emerge from the subclaims in conjunction with the description.

The invention is to be explained in greater detail in the following text using an exemplary embodiment. The single figure diagrammatically shows an inking unit of a rotary press, having an applicator roll which can be thrown onto a form cylinder.

The figure shows an inking unit 1, of which only an applicator roll 2 and a distributor cylinder 3 are shown. Furthermore, a wedge-shaped ink fountain 4 is

shown, by way of example, as the ink source, ink transport rolls 19 which are only indicated diagrammatically transporting ink from said ink fountain 4 to the distributor cylinder 3.

The applicator roll 2 is mounted at both ends with its journals 5, 6 in levers 7, 8. The levers 7, 8 can be pivoted about the rotational axis of the distributor cylinder 3. For this purpose, they are mounted, for example, on the journals of the distributor cylinder 3 or in side walls (not shown), in which the distributor cylinder 3 is also mounted.

In each case one linear motor in the form of an operating cylinder 9, 10 acts in a pivotably mounted manner on the levers 7, 8. A spring or an electric attraction magnet, for example, could also be used as linear motor. Instead of by means of operating cylinders, the levers 7, 8 can also be acted on by means of a rotary motor, for example by means of an electric, pneumatic or hydraulic motor or in a manner based on spring force. A rotary motor 11 of this type is indicated in the figure in thin lines with an item number in brackets.

The applicator roll 2 can be pivoted against a form cylinder 12 by pivoting the levers 7, 8. For this purpose, a fluid, preferably compressed air, is supplied to the operating cylinders 9, 10 at a selected pressure p, the piston rods 13 of said operating cylinders 9, 10 extending and the levers 7, 8 moving into the drawn position together with the applicator roll 2. The pressure p is selected here in such a way that the throwing-on force which acts on the levers 7, 8 produces a contact force which brings about the

desired imprint width B of the applicator roll 2 on the form cylinder 12. Subsequently, the position of the applicator roll 2 is locked by means of a locking apparatus 14. Instead of this, locking apparatuses 15 (denoted in the figure by thin lines and an item number in brackets) can also be arranged on the levers 7, 8.

The locking apparatus 14 can also be released temporarily during continuous printing, as a result of which the thrown-on position of the applicator roll 2 is subsequently adjusted automatically, that is to say the levers 7, 8 are thrown on further or moved back in the event, for example, of a swollen or shrunk applicator roll 2 or a change in diameter as a consequence of thermal expansion. It is also possible to operate the inking unit 1 without locking the thrown-on position of the applicator roll 2, as a result of which automatic subsequent adjustment is performed constantly. After it has been thrown onto the form cylinder 12, it is also possible to operate the applicator roll 2 initially at a defined speed during the running-in period of the inking unit 1 and without locking its position for a defined time period. As a result, the applicator roll 2 can, for example, yield to initial imbalances due to non-uniform colour distribution. Advantageously, the applicator roll 2 is initially thrown on with a higher throwing-on force compared with later operation, in that the operating cylinders 9, 10 are fed initially at a higher pressure p. As a result, throwing-on actions which are too brief as a consequence of static friction are avoided.

In a further design variant, it is also possible to displace the inking unit 1 in the direction 16 toward the form cylinder 12 after the applicator roll 2 has

been thrown onto the form cylinder 12 and this position has been locked. This procedure also compensates for the throwing-on actions which are too brief as a consequence of static friction.

In one design variant, it is also possible to throw the applicator roll 2 onto the form cylinder 12 situated in the print thrown-off position, to lock this position, and to move the form cylinder 12 into the print thrown-on position in the direction 17 and in the process to move the inking unit 1 simultaneously in the direction 17. Means for moving an inking unit are disclosed in DE 100 08 215 A1, for which reason said document is to be considered as belonging to the present application.

The applicator roll 2 can also be thrown onto a form cylinder 12.1 having a different diameter while retaining the position of the inking unit 1. This case is also illustrated in the figure using a dash-dotted line. Here, the pivoting levers 7, 8 follow a greater pivoting path during the throwing-on action, until the applicator roll 2 then comes into contact with the form cylinder 12.1, which contact then occurs with approximately the same contact force and imprint width B as on the larger form cylinder 12.

The applicator roll 2 can also be a dampening solution applicator roll of a dampening unit 18 (denoted with an item number in brackets).

List of reference symbols

1	Inking unit
2	Applicator roll
3	Distributor cylinder
4	Wedge-shaped ink fountain
5	Journal
6	Journal
7	Lever
8	Lever
9	Operating cylinder
10	Operating cylinder
11	Rotary motor
12	Form cylinder
12.1	Form cylinder
13	Piston rod
14	Locking device
15	Locking device
16	Direction
17	Direction
18	Dampening unit
19	Ink transport roll
p	Pressure
B	Imprint width